

**AMENDMENTS TO THE CLAIMS**

**1. (Previously presented)** A method for quantitatively analyzing specimen molecules, which method which comprises:

- (1) passing a solution containing the specimen molecules and a solution containing fluorescent probe molecules capable of forming a complex with the specimen molecules through a micro flow channel such that a laminar flow is formed;
- (2) selectively promoting diffusion of the complex formed according to affinity between the fluorescent probe molecules and the specimen molecules in the laminar flow; and
- (3) fluorometrically determining the degree of diffusion of the complex formed between the specimen molecules and the probe molecules within the micro flow channel by detecting signals emitted from the fluorescent probe molecules and comparing the results to a predetermined calibration curve to quantitatively analyze the specimen molecules.

**2-3. (Canceled)**

**4. (Currently amended)** A method for quantitative determination of a DNA fragment, which method comprises:

- (1) passing a solution containing a DNA fragment of a specified sequence as a specimen molecule and a solution containing a fluorescent probe molecule capable of forming a complex with the specimen molecule through a micro flow channel such that a laminar flow is formed;
- (2) selectively promoting diffusion of the complex formed according to affinity between the fluorescent probe molecule and the specimen molecule in the laminar flow; and
- (3) detecting changes in the degree of diffusion of the complex formed between the specimen molecule and the fluorescent probe molecule within the micro flow channel by detecting signals emitted from the ~~fluorescent~~fluorescent probe molecule and comparing the results to a predetermined calibration curve to fluorometrically determine the content of the specimen molecules.